

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF NORTH CAROLINA**

GLOBAL PLASMA SOLUTIONS, INC.,

Plaintiff,

v.

ELSEVIER INC. and ELSEVIER LTD.,

Defendants.

Civil Action No. _____

JURY TRIAL DEMANDED

ORIGINAL COMPLAINT

Plaintiff Global Plasma Solutions, Inc. (“GPS”), by and through its undersigned attorneys, brings this Original Complaint against Defendants Elsevier Inc. and Elsevier, Ltd. (collectively, “Elsevier” or “Defendants”) and alleges as follows:

INTRODUCTION

1. This case involves a reckless campaign by pseudo-neutral academics with a vendetta against GPS to spread false and misleading statements under the guise of an unbiased and peer-reviewed journal in an effort to advance the false narrative that GPS’s bipolar ionization technology is unsafe and ineffective. This misconduct was motivated by a desperate attempt to grab research funding and for a relatively obscure group of scientists to get their ten minutes of fame. The end result was an intentionally false and reckless study that violated every scientific principle and that falsely attacked a technology that has been proven effective at helping to reduce SARS-CoV-2 in indoor environments. The publication and dissemination of this false study by Elsevier has resulted, and continues to result, in numerous businesses and institutions across the country from implementing this effective technology at the height of the pandemic.

2. Brent Stephens—a professor at the Illinois Institute of Technology—assembled a team consisting of individuals who also sought to disparage GPS (including Elliot Gall, Delphine

Farmer, and Mohammad Heidarinejad) and individuals whom he could easily manipulate (including his graduate-student advisees Yicheng Zeng and Prashik Manwatkar) to pen a study with the predetermined outcome that GPS's technology was ineffective and harmful to consumers. After a sham peer-review process, Elsevier ultimately published that study, entitled "Evaluating a commercially available in-duct bipolar ionization device for pollutant removal and potential byproduct formation," (the "Article") online in March 2021 and in print in May 2021 in its scientific and allegedly peer-reviewed journal *Building and Environment*.¹

3. The lead author of the Article, Yicheng Zeng, has already admitted under oath in a deposition taken in another lawsuit that the underlying data reported in the study is false and contradicts the conclusions reached by the authors. Specifically, the data reported in the appendices to the Article directly contradicts the data reported by the authors in the Article that was used to make the false statements and conclusions about GPS's technology regarding byproducts. Despite the lead author's clear admission under oath, Elsevier has failed to retract the Article.

4. Rather than adhering to the scientific method, in which a researcher poses a question, forms a hypothesis, and then tests that hypothesis to arrive at a well-founded conclusion, Stephens and his team started with the desired conclusion and worked backwards, suppressing or distorting any evidence that failed to fit their predetermined narrative. In particular, Stephens was determined to tell, under the shield of academia, the false story that GPS's technology caused an increase in certain harmful byproducts, including acetone, ethanol, and formaldehyde.

5. In an email dated November 2, 2020, during the thick of conducting the study that is the subject of the Article, Zeng reported test results to Stephens which showed agglomeration efficacy—data proving that GPS's Needlepoint Bipolar Ionization (NPBITM) technology works.

¹ A true and correct copy of the Article is attached hereto as **Exhibit A**.

Not happy with this conclusion, Stephens responded trying to come up with any reason to ignore the results and later tried to justify his faulty logic. Zeng eventually got on board with ignoring certain test data, leading to the suppression of that data. After swaying Zeng to suppress data supportive of GPS's technology and selectively including only those figures that purported to show that GPS's technology was ineffective and produced harmful byproducts, Stephens proclaimed "*I think our story is strong now.*" That "story" is now the Article being circulated by Elsevier under the guise of academia.

6. In emails obtained by GPS, Stephens, in consultation with lawyers at Illinois Tech, decided specifically to name GPS and its product in the study for the purpose of directly attacking GPS and gaining more publicity. While conducting the study in late 2020, Stephens reached out to a reporter with the New York Times in an attempt to gain publicity attacking ionization and GPS's technology. Stephens responded with excitement when the reporter agreed to do the story well before the results of the study were completed. Stephens already knew how he would construct the "story" even before finishing the study. Stephens was chasing fame and grant money from GPS's competitors who were quick to fuel the predetermined exercise. Defendants knew or should have known of Stephens' misconduct, yet Defendants deliberately allowed the Article to be published which specifically attacked GPS with false data.

7. The resulting study and its data were fundamentally flawed and biased in several ways. First, the critical data reported in the study's appendices contradicts the data reported in the main body of the Article on which the authors rely to conclude GPS's device caused an increase in certain compounds. Zeng, the lead author of the Article, admitted that the measurements reported in the Article that led to these conclusions ***were actually incorrect when compared with two appendices contained in the Article's supplementary data***, thus disproving the Article's

principal conclusion. In addition, beyond just this material error, there were two tests for many of the compounds which the authors selectively picked while ignoring contradictory results. Second, the conclusions drawn from the study are unreliable because of flawed experimental design. The authors failed to install and utilize the GPS device in the manner recommended by the manufacturer, thereby tainting all their results and making it virtually impossible to assess the data in any meaningful way or use the data as a model for real-life conditions. Third, the authors of the Article withheld and suppressed data conflicting with their agenda. For example, evidence reveals that Stephens knowingly and selectively disregarded data concerning one of the byproducts (acetaldehyde) that conflicted with his agenda, omitting the data from the Article's supplementary data entirely and cherry-picking a test result for acetone while ignoring a contradictory result with a more reliable test.

8. Each of these issues should have been caught in Elsevier's peer-review process before it released the Article to the public. A simple review of the technology—something that should be undertaken when reviewing a study that features a single product—would have alerted Elsevier to the study's flawed design. The author's suppression of data likewise should have been readily apparent to Elsevier, since the supplemental data contained the results of two different tests. Finally, to discover the author's misrepresentations about increases in several compounds, Elsevier need only compare the data that was included in the Article's supplemental data with the Article's conclusions. And yet, despite purporting to subject the article to a peer-review process wherein the Article and its supplementary data were submitted to others in academia for review of its contents,² Elsevier published the Article in the scientific journal *Building and Environment*

² Elsevier, *What is Peer Review*, <https://www.elsevier.com/reviewers/what-is-peer-review>.

without regard for the blatant biases of its authors and its violations of scientific integrity and distortions of data.

9. Stephens's true intent for the Article—to damage GPS and its reputation and capture grant money from competitors—has been realized. As anticipated, the Article has been weaponized by competitors of GPS who teamed up with Stephens, including Marwa Zaatari and enVerid Systems, Inc., to help create what they termed “bipolar backlash” in undermining GPS’s technology. Zaatari has relied on the Article in making false and defamatory attacks about the efficacy and safety of GPS’s products, including using the Article in an “Open Letter” dated April 12, 2021—a mere month after the Article was published online and before it was published in print—to parents and school boards attacking GPS’s technology and seeking to steal those customers from GPS. In the Open Letter, which was co-signed by Stephens and other authors of the Article, Zaatari falsely stated that she had no conflict of interest with GPS when, in reality, she was working for enVerid (GPS’s direct competitor) to expand its business and steal GPS’s customers. Stephens was aware of Zaatari’s conflict. The truth about Zaatari’s vendetta against GPS and this conflict of interest has been revealed to GPS in the course of a lawsuit filed by GPS in federal court in Dallas, Texas (the “Texas Litigation”). It is clear that the authors of the Article had a vendetta against GPS and used dubious scientific protocols to craft a study that supported their narrative rather than adhere to scientific integrity. Zaatari has continued to raise money to fuel Stephens’ biased research against GPS to benefit enVerid.

10. Elsevier’s purported peer-review process was a sham as it failed to catch obvious flaws—*in equipment, procedure, and reporting*. After Elsevier published the Article, GPS was able to readily ascertain its flaws. On January 11, 2022, GPS notified both the Editor-in-Chief of *Building and Environment* and Elsevier of the unreliability of the Article and the misconduct of its

authors through a letter dated January 11, 2022 and requested that Elsevier retract the article in full to mitigate GPS's damages.³ GPS's letter detailed each of the allegations recited in this Complaint, taking care to explain each one to Elsevier and to provide evidentiary support for its allegations, including through emails exchanged between the authors that set out their misconduct and biases against GPS as well as through the inclusion of the Third Amended Complaint in the Texas Litigation.⁴ GPS's letter to Elsevier specifically advised Elsevier that the conclusions reached in the Article were false, misleading, and defamatory, and that the letter "shall serve as five (5) days written notice of the false and defamatory statements contained in the Article" under N.C. Gen. Stat. § 99-1.

11. Despite being advised of these clear errors by GPS, Elsevier has failed to take corrective action or even provide GPS a timeline for resolution of the issues. Although on January 12, 2022, Elsevier responded that it would "*look into this matter – which, in accordance with [Elsevier's] policies and industry guidelines on publishing ethics, will include reviewing [GPS]'s allegations with the authors of the paper as well as the editor of the journal,*" it has taken no steps to rectify the situation, to correct any of the flagrant inaccuracies, or to provide readers with additional context regarding the authors' clear biases against GPS. Elsevier was made aware that the Article's lead author admitted under oath that the data in the study contradicted the authors' conclusions but has nonetheless failed to act.

12. On January 20, 2022, GPS followed up with Elsevier, further emphasizing the importance that Elsevier resolve this matter immediately to mitigate the tremendous harm GPS has suffered and continues to suffer as a result of the publication of the Article.

³ A true and correct copy of R. Muckenfuss Ltr. to Q. Chen dated Jan. 11, 2022 is attached hereto as **Exhibit B**.

⁴ See generally, *id.*

13. As of the date of the filing of this Complaint, Elsevier has yet to meaningfully respond to GPS's January 20, 2022 email or retract the Article.

14. While GPS respects academic investigation and scientific debate and in fact encourages independent scientific research into the safety and efficacy of air purification systems—including its own technology—GPS will not sit idly by while its competitors and those working with its competitors work to advance their agenda and spread false, reckless, misleading, disparaging, and defamatory information about GPS and its products. Elsevier has caused the broad dissemination of this unprotected speech and cannot use its sham peer-review process as a shield.

15. GPS therefore brings this lawsuit to protect itself from Defendants' unlawful and reckless actions and to obtain relief for the irreparable harm Defendants have caused GPS and its business.

THE PARTIES

16. GPS is a corporation organized under the laws of the State of Delaware with a principal place of business at 3101 Yorkmont Road, Suite 400, Charlotte, North Carolina 28208.

17. Upon information and belief, Defendant Elsevier Inc. is a Delaware corporation with a principal place of business at 230 Park Avenue, Suite 800, New York, New York 10169 and may be served through its registered agent at 28 Liberty Street, New York, New York 10005.

18. Upon information and belief, Defendant Elsevier Ltd. is a United Kingdom corporation with a principal place of business at 125 London Wall, London EC2Y 5AS United Kingdom. Upon information and belief, Elsevier Ltd. may be served through its counsel at 125 London Wall, London EC2Y 5AS United Kingdom.

JURISDICTION AND VENUE

19. This is a civil action for defamation and unfair and deceptive trade practices under North Carolina law.

20. This Court has diversity jurisdiction over this lawsuit under 28 U.S.C. § 1332 because the matter in controversy exceeds \$75,000, exclusive of costs and interests, and is between citizens of different states.

21. This Court has personal jurisdiction over both Elsevier entities because Elsevier has extensive contacts with North Carolina and in the context of the facts giving rise to this action, Elsevier directly targeted North Carolina in its actions and intent. Here, Elsevier has purposefully directed activities at North Carolina. Specifically, Elsevier (1) published the Article that intentionally discusses and defames GPS by name and identifies GPS as a North Carolina company; (2) manifested an intent to reach North Carolina readers when it posted the Article, which discussed the safety and efficacy of a North Carolina product sold in North Carolina, to its website and in print in its allegedly peer-reviewed journal, *Building and Environment*, which were accessible in or mailed to North Carolina and for which North Carolina residents and educational institutions purchased subscriptions; and (3) the primary effects of the defamatory statements on GPS's reputation were felt in North Carolina. The Article specifically notes that the device being tested and written about is a GPS device from "Charlotte, NC USA."⁵ Moreover, Elsevier is authorized to do business in North Carolina, maintains a registered agent in Raleigh, North Carolina, and sells books, journals, and more to North Carolina residents, both digitally and in print. For example, Elsevier has a contract with Duke University's libraries, Duke University pays for a subscription to Elsevier's ScienceDirect, and Elsevier has published numerous articles written

⁵ Ex. A.

by Duke University faculty,⁶ and Western Carolina University pays for a subscription to ScienceDirect, an Elsevier website that hosts the electronic version of Building and Environment, the journal in which the Article was published.⁷ Accordingly, the Article would have been accessible to university students and faculty in North Carolina for their consumption in North Carolina, at a minimum through the universities' subscriptions to ScienceDirect.

22. Venue is proper in this judicial district under 28 U.S.C. § 1331(b)(2) and (b)(3) because a substantial part of the events giving rise to the claims asserted in this Original Complaint against Defendants occurred within this judicial district and Defendants are subject to personal jurisdiction in this judicial district.

FACTUAL BACKGROUND

A. GPS and GPS's Products

23. GPS is well-known in the air purification and quality industry for providing customers with accurate recommendations and products that meet each individual customer's air quality and purification needs.

24. GPS was founded in 2008 and has a proven history of providing safe and effective products to its customers.

25. GPS's products are based on its revolutionary NPBI™ technology.

26. NPBI™ is a patented technology that cleans the air by introducing ions in the space via the airflow in the ventilation system.

⁶ Duke University, Scholars@Duke, <https://scholars.duke.edu/display/publisherelsevier> (last visited Jan 24, 2022); Lindsay McKenzie, Librarians prepare to take a harder line with publishers (2019), <https://www.insidehighered.com/news/2019/03/27/librarians-prepare-take-harder-line-publishers> (last visited Jan 24, 2022) (stating that in March 2019, Duke had signed a 3 year contract with Elsevier); Duke University, Library Guides, <https://guides.library.duke.edu/az.php?q=sciedirect> (last visited Jan 24, 2022) (listing ScienceDirect as a database to which Duke students and faculty have access).

⁷ Western Carolina University, Hunter Library Research Guides, <https://researchguides.wcu.edu/az.php> (last visited Jan 24, 2022).

27. GPS's technology has served as an effective tool during the Covid-19 pandemic in reducing airborne indoor pathogens, including SARS-CoV-2.

28. GPS seeks to develop products that meet and exceed industry standards, as evidenced by the approvals of GPS's products, including the NPBI™ product, by independent certifying agencies such as Underwriters Laboratory (UL), Conformite Europeenne (CE), Radio Technical Commission for Aeronautics (RTCA), California's Office of Statewide Health Planning and Development (OSHPD), California Air Resources Board (CARB), and other standard-setting bodies. GPS's products also comply with all applicable Environmental Protection Agency regulatory requirements.

29. GPS's NPBI™ product has achieved the UL 2998 zero ozone emissions certification. This stringent certification requires that products demonstrate that they emit less than 0.005 parts per million (ppm), which is below the quantifiable level for ozone testing. Notably, certification under UL 2998 requires demonstration of ozone emissions at least ten times lower than what is permitted under the standard UL 867 test and by the United States Food and Drug Administration (FDA) for medical devices.

30. Consistent with GPS's commitment to transparency with its customers and potential customers, GPS prominently displays the results of tests by third-party labs of its NPBI™ technology on its website, including sensitivity testing, simulation testing, specialty testing, and field testing.⁸

31. GPS also works directly with customers—prior to any purchase—to conduct site-specific studies that assess the performance and appropriateness of GPS's products for their unique needs.

⁸ A true and correct copy of the third-party testing section of GPS's website is attached as **Exhibit D**.

32. As a result of these efforts, along with the time and resources GPS invests in its products and GPS's consistent dedication to excellence, GPS has earned a reputation as a leader in the air quality/purification industry. Approximately 250,000 GPS NPBI™ air purification systems have been installed worldwide, including in federal government buildings, hospitals, corporate facilities, universities, and in hundreds of primary and secondary schools.

33. GPS's technology is also trusted by some of the world's leading companies involved in aviation manufacturing, aerospace technology, and performance equipment.

34. GPS has employees who are prominent members in good standing of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), and GPS's employees regularly lead lectures and speak at ASHRAE meetings.

35. GPS also has an active membership with the American Society for Health Care Engineering (ASHE), and its technology is incorporated into a system that has passed the stringent RTCA DO-160 tests.

36. GPS's products are routinely evaluated by leading experts, including those within the Environment, Health, and Safety (EHS) departments representing major institutions, such as the types of institutions identified above.

37. GPS's reputation for excellence and dedication to offering safe, high-quality products is embodied within its GLOBAL PLASMA SOLUTIONS logo, the GPS name, and its NPBI™ technology, all of which are readily associated with GPS and its products when encountered by the public and entities or individuals within the industry.

B. The Study Giving Rise to the Article

38. In May 2020, Brent Stephens, an Environmental and Architectural Engineering professor and department chair at the Illinois Institute of Technology approached a Ph.D. candidate in his department, Yicheng Zeng, to assist him in conducting a study to test a certain indoor air

cleaner called an ionizer for utility and byproduct formation.⁹ Prior to Stephens approaching Zeng in May 2020, she did not have any involvement in, knowledge of, or academic or other experience with ionization.¹⁰ Nor was she aware of any concerns regarding bipolar ionization producing byproducts despite reading articles and scientific studies concerning bipolar ionization.¹¹ Zeng testified in her deposition that she had reviewed all relevant literature on the topic and was not aware of any prior concerns that GPS's NPBI™ technology caused an increase in any harmful byproducts.

39. Stephens's study had three parts: (1) byproduct formation testing in the lab; (2) particle efficacy testing in the lab; and (3) byproduct formation testing in the field at an office location in Portland, Oregon. The setup for the byproduct and particle lab testing involved using a chamber inside a large lab at the Illinois Institute of Technology where Zeng and Stephens study and work.¹² The lab in which the chamber was placed also contained "many, many [other] things," including lab "instruments," desks, chairs, and more.¹³ The conditions of the lab in which the chamber was housed, including but not limited to an itemization of the contents of the room or a description of the HVAC system that supplied air to the room, were not described in the Article, nor were they tested to achieve or determine any type of steady state condition in terms of volatile organic compound ("VOC") levels.¹⁴ For the byproduct testing, the chamber was filled with objects and materials, including chairs, clothing, a desk, and a lamp, to produce VOCs inside the chamber.¹⁵ The GPS device utilized for the test was the GPS-FC48-AC. Stephens selected the

⁹ **Exhibit C**, Zeng Dep. at 15:11–25. The deposition of Zeng was conducted by GPS in the Texas Litigation on January 5, 2022.

¹⁰ *Id.* at 16:10–14, 19:3–6.

¹¹ *Id.* at 48:24–49:14.

¹² Ex. C at 51:16–53:8.

¹³ *Id.* at 53:9–23.

¹⁴ Ex. C at 72:21–74:11.

¹⁵ *Id.* at 49:22–50:22.

device to be used in the study and decided to name the product by name.¹⁶ The authors did not consult GPS regarding how to install the ionizer in the chamber.¹⁷ The authors of the study then attempted to measure chemical compounds being studied (also called analytes) present with ionization on and off, inside and outside the chamber. Importantly, throughout the testing period, air was escaping from inside the chamber to outside the chamber into the lab and vice versa; in other words, the chamber was not sealed.¹⁸ The chamber also did not recirculate the air, in direct contravention of the manufacturer guidance.

40. The field test was performed in an office space in Portland, Oregon. The field study purported to observe VOC concentrations upstream and downstream of a GPS device inside the air duct. But the Article conceded that no control observations—a key feature of the scientific method—were recorded because the individuals conducting the field study had no access to the building controls. Even more problematic is that Zeng testified in her deposition that she had no knowledge of the field test and was not involved with the observations or with the accuracy of any measurements reported in the Article, despite being the lead author.

41. The participants in the study, who are named as authors of the Article, include Zeng, Stephens, Prashik Manwatkar, Aurelie Laguerre, Marina Beke, Insung Kang, Akram Ali, Delphine Farmer, Elliott Gall, and Mohammad Heidarinejad.¹⁹

42. Stephens and Heidarinejad are both professors at Illinois Institute of Technology who share the lab in which the experiment was conducted.²⁰

¹⁶ *Id.* at 47:5–16.

¹⁷ *Id.* at 62:11–19.

¹⁸ *Id.* at 59:5–24, 62:7–10.

¹⁹ Ex. A at 1.

²⁰ Ex. C at 20:17–21:15.

43. Zeng, Manwatkar, Beke, Kang, and Ali are all graduate students in Stephens's lab who are studying under Stephens at Illinois Institute of Technology.²¹

44. Gall is a professor at Portland State University who is an outspoken critic of GPS. Laguerre is Gall's graduate student.²²

45. Farmer is an assistant professor at Colorado State University who likewise has a vendetta against GPS.

46. Together, Gall and Farmer are part of Zaatari's echo-chamber comprised of a small group of individuals who have published similarly problematic critiques of GPS and cite to each other as sources, creating an endless circle in which they can perpetuate their defamatory remarks with cover from others with a parallel agenda. Notably, Stephens, Gall, and Farmer all signed on to Zaatari's Open Letter discussed below, and all have written articles, published tweets, and given interviews defaming GPS. Notably, prior to the flawed study at issue here, there was no research or other studies that suggested UL 2998 certified needlepoint bipolar ionization (like GPS's technology) produced harmful levels of byproducts.

C. The Article Is False and Misleading Because the Study's Design was Flawed, the Authors Suppressed and Misrepresented Data, and the Peer Review Process was a Sham.

47. The Article is demonstrably misleading in that it falsely and recklessly concludes that GPS's technology results in the increase of certain byproducts. The study reported in the Article was based on a flawed design, suppressed data, relied upon distorted and undisclosed data, and misrepresented study results to make it appear that certain byproducts increased.

²¹ *Id.* at 23:12–25, 27:20–29:18.

²² Ex. C at 26:2–25.

i. The Study that Forms the Basis of the Article Is Based on a Flawed Design, Lacks Fundamental Scientific Requirements, and Thus, the Results Are Misleading

48. As discussed, the scientific method requires that experiments have controls, be replicated, and be reproducible by others in their results. The study here lacked all three.

49. *First*, fundamental to a reliable scientific experiment is a counterfactual control. Zeng admitted that there was no experimental control to test ionizer on and off conditions or to control who entered the room while measurements were being taken, thereby altering the indoor air composition outside the chamber, and skewing the data.²³ This is particularly significant here, since the authors chose to measure their results in terms of a ratio of inside chamber to outside chamber air composition. Accordingly, if conditions were altered outside the chamber (for instance, if someone opened the door and altered the air composition in the room by letting air in or out of the room), the results would be impacted. And, in fact, this is a proven flaw of the study. For example, the authors chose to disregard the results from one of the test methods for the compound acetone (the TO-11A method) in favor of the other test method (TO-15) because of purported variation in the concentration of acetone outside of the chamber. Notwithstanding that this explanation is not included anywhere in the Article, the authors' choice to disregard this data (which conveniently countered their narrative) directly conflicts with their decision to include similar data for another compound, ethanol. Ethanol, as reported in Table 3 of the Article, showed a 48% variation outside the chamber with ionization on (compared to the 16% difference reported for the TO-11A acetone results) and yet, the authors chose to use the ethanol test result in the Article to support their conclusion. The ethanol concentration inside the chamber actually declined, but the authors nevertheless reported a 78% increase for ethanol by using the flawed ratio calculation where ethanol dropped dramatically outside the chamber. The authors further noted in

²³ Ex. C at 78:9–19.

the Article there was a “high uncertainty” of identifying ethanol at all using their compound identification process. Nevertheless, the Article emphasized the ethanol result to suggest ionization increased the compound, while selectively ignoring the contradictory acetone result. This lack of controls combined with the authors’ dubious ratio calculation created an environment in which the authors could manipulate and cherry-pick their results. The peer reviewers at Elsevier should have easily recognized these errors and flaws on the face of the study and certainly during any reasonable peer review process.

50. **Second**, the authors of the Article did not repeat any of the experiments in the study, despite that experimental replication is an essential step of the scientific process and routine to scientific studies to ensure that data, analysis, and results are reliable. Indeed, the underlying study performed each of the two test methods only once for each of the VOCs and particulate matter and did so on one day. Zeng also admitted that no replicates were performed to ensure that the results (even if accurately reported) could be repeated by others.²⁴

51. **Third**, the authors failed to install and utilize the GPS device in the manner recommended by the manufacturer, thereby tainting all their results, making it virtually impossible for others to reproduce or assess the data in any meaningful way or use it as a model for real-life conditions. The study’s execution further erred in that the testing environment for the study never reached a steady state, or a scenario in which the levels of air contaminants in the chamber reached equilibrium. This lack of achieving a steady state also makes it impossible for the study to be reproduced by others. Instead, the Article states that the study was merely “approaching steady-state baseline conditions inside the chamber.”²⁵ “**Approaching** steady state” means that the study never achieved steady state. In noting that they were approaching a steady state, the authors tacitly

²⁴ Ex. C at 140:8–24.

²⁵ E.g., Ex. A at 4.

admit that they should have achieved a steady state in the testing environment prior to commencing the study, yet they did not.

52. Each of these three shortcomings should have been captured by Elsevier's peer review process. Experimental controls, replication, and reproducibility by others are all fundamental scientific principles that are integral to the scientific method. Elsevier's failure to point out even the most elementary flaw with the scientific method demonstrates that its peer review process is little more than a rubber stamp without any teeth.

ii. The Authors Suppressed Data and Presented it in a Misleading Manner

53. The purpose of the study was to conduct experiments to "evaluate the gas and particle removal effectiveness and potential for byproduct formation resulting from the operation of" a GPS device.²⁶ The authors selected nine analytes to measure inside and outside of the chamber and measured the concentration with the ionizer on and off; the authors also used two test methods (TO-11A and TO-15) as represented in Table 2 of the Article to measure certain analytes. The authors employed a flawed ratio calculation comparing the conditions inside the chamber with those outside of the chamber to assess whether an analyte increased in concentration.²⁷ The Article claimed to report an increase in the following analytes: formaldehyde, acetaldehyde, acetone, butyraldehyde, ethanol, and toluene. Based on the data reported, the Article concluded that bipolar ionization led to "observed increases in some oxygenated VOCs" and specifically highlighted acetone, ethanol, and toluene.

54. The Article's conclusion regarding the analytes was, at best, false and misleading. Specifically, the authors and Elsevier ignored contradictory data and discarded relevant test data regarding analyte measurements.

²⁶ Ex. A at 2.

²⁷ Ex. A at 8, Table 2 n.1.

55. To begin, for acetone, although the study conducted two detection methods (TO-11A and TO-15), it reported only one (test method TO-15) in the main part of the Article that purported to show a 73% increase in produced acetone using the flawed ratio calculation. But the supplementary data to the Article listed in Appendix 1 contains the other test data (TO-11A), which shows a *decrease of acetone* with ionization on, directly contradicting what was reported. Specifically, Zeng admitted in her deposition that analyte measurements reported in the Article were *incorrect when compared to appendices* contained in the supplemental information.²⁸ Appendices 1 and 2 contained in the Article's supplementary data purport to show the complete analyte concentration measurements reported from the lab chamber tests. When compared to the measurements selectively published in Table 2 in the main Article, the results are the exact opposite:

Table 2
Organic compound analysis for the TO-15 and TO-11A analyte lists applied to samples collected inside (I) and outside (O) the chamber during ionizer on and off conditions on October 15, 2020.

Test Method	Analyte	MW (g/mol)	Ionizer Off			Ionizer On			% Change in I/O Ratio ¹
			Inside ($\mu\text{g}/\text{m}^3$)	Outside ($\mu\text{g}/\text{m}^3$)	I/O Ratio	Inside ($\mu\text{g}/\text{m}^3$)	Outside ($\mu\text{g}/\text{m}^3$)	I/O Ratio	
TO-11A	Formaldehyde	30	11.4	5.9	1.95	10.6	5.3	1.98	+2%
TO-11A	Acetaldehyde	44	5.9	5.4	1.10	5.7	4.6	1.25	+13%
TO-15	Acetone	58	23	36	0.64	41	37	1.11	+73%
TO-11A	Butyraldehyde	72	2.1	2.0	1.06	2.2	1.6	1.35	+20%
TO-15	Toluene	92	2.6	4.5	0.58	3.4	5.1	0.67	+15%
TO-15	1,2-Dichloroethane	99	4.1	<2.4	>1.7	<2.4	<2.4	n/a	At least -42%
TO-15	Ethylbenzene	106	7.5	<2.7	>2.8	<2.7	<2.7	n/a	At least -64%
TO-15	m,p-Xylene	106	24	<5.2	>4.6	<5.2	<5.2	n/a	At least -70%
TO-15	Dichlorodifluoromethane	121	3.6	<3.0	>1.2	<3.0	<3.0	n/a	At least -17%
Total	Summed TOC ²	n/a	84.2	50.9	1.63	60.0	50.8	1.16	-19%

Appendix 1: List of TO-15 VOC analytes and reported concentrations from chamber tests²⁹

Test Method	Analyte	Units	Ionizer On		Ionizer Off	
			Inside	Outside	Inside	Outside
TO-15	1,1,1-Trichloroethane	mg/m ³	< 0.0033	< 0.0033	< 0.0033	< 0.0033
TO-15	1,1,2-Trichloroethane	mg/m ³	< 0.0033	< 0.0033	< 0.0033	< 0.0033
TO-15	1,1-Dichloroethane	mg/m ³	< 0.0024	< 0.0024	< 0.0024	< 0.0024
TO-15	1,1-Dichloroethene	mg/m ³	< 0.0024	< 0.0024	< 0.0024	< 0.0024
TO-15	1,2,4-Trichlorobenzene	mg/m ³	< 0.0046	< 0.0046	< 0.0045	< 0.0045

²⁸ Ex. C at 106:8–22.

²⁹ GPS incorporates the table and appendix labeling set forth in the Article and its supplemental data for the convenience of the Court and identification purposes only. GPS does not admit any allegation made in, or inferences suggested by, such labeling and instead denies them.

TO-15	1,2-Dibromoethane	mg/m ³	< 0.0046	< 0.0046	< 0.0045	< 0.0045
TO-15	1,2-Dichlorobenzene	mg/m ³	< 0.0036	< 0.0037	< 0.0036	< 0.0036
TO-15	1,2-Dichloroethane	mg/m ³	0.0041	< 0.0024	< 0.0024	< 0.0024
TO-15	1,2-Dichloropropane	mg/m ³	< 0.0027	< 0.0027	< 0.0027	< 0.0027
TO-15	1,4-Dichlorobenzene	mg/m ³	< 0.0036	< 0.0037	< 0.0036	< 0.0036
TO-15	1,4-Dioxane	mg/m ³	< 0.0055	< 0.0055	< 0.0054	< 0.0055
TO-15	2-Butanone	mg/m ³	< 0.0046	< 0.0046	< 0.0045	< 0.0045
TO-15	Acetone	mg/m ³	0.023	0.036	0.041	0.037
TO-15	Benzene	mg/m ³	< 0.0018	< 0.0018	< 0.0018	< 0.0018
TO-15	Bromodichloromethane	mg/m ³	< 0.0039	< 0.0040	< 0.0039	< 0.0039
TO-15	Bromoform	mg/m ³	< 0.016	< 0.016	< 0.016	< 0.016
TO-15	Bromomethane	mg/m ³	< 0.0058	< 0.0058	< 0.0057	< 0.0058
TO-15	Carbon disulfide	mg/m ³	< 0.0019	< 0.0019	< 0.0019	< 0.0019
TO-15	Carbon tetrachloride	mg/m ³	< 0.0039	< 0.0040	< 0.0039	< 0.0039
TO-15	Chlorobenzene	mg/m ³	< 0.0027	< 0.0027	< 0.0027	< 0.0027
TO-15	Chloroform	mg/m ³	< 0.0030	< 0.0030	< 0.0030	< 0.0030
TO-15	cis-1,2-Dichloroethene	mg/m ³	< 0.0024	< 0.0024	< 0.0024	< 0.0024
TO-15	cis-1,3-Dichloropropene	mg/m ³	< 0.0027	< 0.0027	< 0.0027	< 0.0027
TO-15	Dibromochloromethane	mg/m ³	< 0.0052	< 0.0052	< 0.0051	< 0.0052
TO-15	Dichlorodifluoromethane	mg/m ³	0.0036	< 0.0030	< 0.0030	< 0.0030
TO-15	Ethylbenzene	mg/m ³	0.0075	< 0.0027	< 0.0027	< 0.0027
TO-15	m,p-Xylene	mg/m ³	0.024	< 0.0052	< 0.0051	< 0.0052
TO-15	Methyl tert-butyl ether	mg/m ³	< 0.0021	< 0.0021	< 0.0021	< 0.0021
TO-15	Methylene chloride	mg/m ³	< 0.021	< 0.021	< 0.021	< 0.021
TO-15	Naphthalene	mg/m ³	< 0.0030	< 0.0030	< 0.0030	< 0.0030
TO-15	o-Xylene	mg/m ³	< 0.0027	< 0.0027	< 0.0027	< 0.0027
TO-15	Styrene	mg/m ³	< 0.0027	< 0.0027	< 0.0027	< 0.0027
TO-15	Tetrachloroethene	mg/m ³	< 0.0042	< 0.0043	< 0.0042	< 0.0042
TO-15	Toluene	mg/m ³	0.0026	0.0045	0.0034	0.0051
TO-15	trans-1,2-Dichloroethene	mg/m ³	< 0.0024	< 0.0024	< 0.0024	< 0.0024
TO-15	trans-1,3-Dichloropropene	mg/m ³	< 0.0027	< 0.0027	< 0.0027	< 0.0027
TO-15	Trichloroethene	mg/m ³	< 0.0033	< 0.0033	< 0.0033	< 0.0033
TO-15	Trichlorofluoromethane	mg/m ³	< 0.0033	< 0.0033	< 0.0033	< 0.0033
TO-15	Vinyl acetate	mg/m ³	< 0.021	< 0.021	< 0.021	< 0.021
TO-15	Vinyl chloride	mg/m ³	< 0.0015	< 0.0015	< 0.0015	< 0.0015
TO-15	Xylenes, Total	mg/m ³	0.025	< 0.0079	< 0.0079	< 0.0079

Appendix 2: List of TO-11A VOC analytes and reported concentrations from chamber tests

Test Method	Analyte	Units	Ionizer On		Ionizer Off	
			Inside	Outside	Inside	Outside
TO-11A	2,5-Dimethylbenzaldehyde	µg/m ³	< RL ¹	< RL	< RL	< RL
TO-11A	Acetaldehyde	µg/m ³	5.9	5.4	5.7	4.6
TO-11A	Acetone	µg/m ³	29.6	23.0	26.0	19.4
TO-11A	Acrolein	µg/m ³	< RL	< RL	< RL	< RL
TO-11A	Benzaldehyde	µg/m ³	< RL	< RL	< RL	< RL
TO-11A	Butyraldehyde	µg/m ³	2.1	2.0	2.2	1.6
TO-11A	Crotonaldehyde	µg/m ³	< RL	< RL	< RL	< RL
TO-11A	Formaldehyde	µg/m ³	11.4	5.9	10.6	5.3

TO-11A	Hexaldehyde	$\mu\text{g}/\text{m}^3$	< RL	< RL	< RL	< RL
TO-11A	Isovaleraldehyde	$\mu\text{g}/\text{m}^3$	< RL	< RL	< RL	< RL
TO-11A	m,p-Tolualdehyde	$\mu\text{g}/\text{m}^3$	< RL	< RL	< RL	< RL
TO-11A	o-Tolualdehyde	$\mu\text{g}/\text{m}^3$	< RL	< RL	< RL	< RL
TO-11A	Propionaldehyde	$\mu\text{g}/\text{m}^3$	< RL	< RL	< RL	< RL
TO-11A	Valeraldehyde	$\mu\text{g}/\text{m}^3$	< RL	< RL	< RL	< RL

56. Incredibly, this conflicting result was not reported in the Article or mentioned anywhere by the authors. Zeng, the lead author of the Article, testified that she thought there was a mislabeling issue with the data in the Appendix and that it reported “ionizer on” when it should have said “ionizer off.” Even assuming *arguendo* Zeng is correct, that data would still show only a 4.7% increase of acetone instead of the 73% increase reported in the Article. Zeng confirmed this calculation in her deposition. Stephens ignored this conflicting data. Elsevier’s peer review process should have easily detected these inaccuracies and false data points.

57. Moreover, in an email dated October 30, 2020, Stephens admitted the formaldehyde data did not support a conclusion that ionization had increased that analyte: “*So the formaldehyde data show basically no change. I/O ratio of 1.95 ionizer off; 1.98 ionizer on. +2% higher, but not enough to demonstrate real formation (could be higher because of slightly higher inside chamber temperatures leading to slightly higher emissions inside for example).*”³⁰ Despite first acknowledging that the study’s formaldehyde data exhibited “basically no change” and that GPS technology does not “demonstrate real formation” of formaldehyde, the Article falsely published a 2% increase in formaldehyde production, without clarifying the statistical insignificance of this increase in the conclusion. Elsevier’s peer review process of supposed experts should have detected this omission.

58. Evidence further reveals that Stephens knowingly disregarded data concerning another analyte, acetaldehyde. In an email dated November 4, 2020, Stephens noted the different

³⁰ See B. Stephens email dated Oct. 30, 2020, attached hereto as **Exhibit E**.

results obtained for acetaldehyde using the two test methods: “*acetaldehyde (which was also identified via TO-15 tentatively ID compound search and again yielded different results between the two methods)*.”³¹ Like the acetone data that was selectively ignored in the Article, so too were the conflicting acetaldehyde data. But this time, the conflicting data was left out of the supplemental data entirely.

iii. The Peer Review of the Study was Flawed

59. Elsevier’s peer review of the study was flawed, as the process either entirely missed or ignored the errors outlined above.

60. Elsevier published the Article in the scientific journal *Building and Environment* without apparent regard for the blatant biases of its authors and with its violations of scientific integrity and distortions of data.

61. The publication of the Article flies in the face of Elsevier’s own peer review protocols, which acknowledge that “[t]he peer review system exists to validate academic work, helps to improve the quality of published research, and increases networking possibilities within research communities... Elsevier relies on the peer review process to uphold the quality and validity of individual articles and the journals that publish them.”³²

62. Elsevier articulates and promotes several peer review processes in detail, including single anonymized review, double anonymized review, triple anonymized review and open review, all of which employ and emphasize the need to: (1) limit bias; (2) encourage honest, open reviewing; and (3) promote review comments and criticism.³³ Notably, Elsevier cites to a 2015 survey by the Publishing Research Consortium, where 82% of researchers agreed that “without

³¹ See Ex. E, B. Stephens email dated Nov. 4, 2020.

³² See *supra* n. 2.

³³ *Id.*

peer review there is no control in scientific communication.” Yet, none of the objective errors and omissions in the Article were corrected during Elsevier’s peer review protocol or prior to the Article’s publication.

63. Moreover, the Article lacks the transparency outlined in the peer review procedure that Elsevier claims is integral to its publication process.³⁴ The acknowledgements of the Article note that “several colleagues who will remain anonymous who provided their insight on experiences with installations of the tested ionizer and also loaned equipment for our testing.”³⁵ When pressed on the identity of these individuals in her deposition, Zeng’s attorney instructed Zeng not to answer, although she did testify that the identity of anyone who contributed to the Article should be disclosed for peer review and that here, they were not.³⁶

64. Furthermore, and in addition to Elsevier’s peer review process, each of the coauthors to the Article—a total of 13 scientists—were likewise responsible for the integrity of the Article, and for checking for quality issues. Each of the 13 scientists, in addition to the editor and publisher, failed to identify obvious errors that would completely reverse several of the key findings and conclusions of the Article.

65. Accordingly, Elsevier’s peer review of the Article, which failed to identify any of the issues outlined in this Complaint, was flawed and reckless.

D. The Article is Defamatory

66. The Article recklessly publishes a litany of statements, conclusions, and data that are demonstrably false and misleading.

³⁴ See id. (“In general transparency is the key to trust in peer review.”).

³⁵ Ex. A at 13.

³⁶ Ex. C. at 42:13–44:21.

67. By falsely concluding that GPS's NPBIT™ technology produces harmful byproducts based on a flawed, biased, and scientifically unreliable study, the Article defames GPS and its world-renowned technology.

68. Indeed, the unreliable conclusions and false statements set forth in the Article have directly caused significant harm to GPS and its business reputation.

69. Moreover, despite the glaring flaws set forth in the Article, it has been the basis for a number of unsupported claims pertaining to GPS and its NPBIT™ technology made by Zaatari, Gall, Farmer, enVerid, and others.

70. The Article has been cited consistently by Zaatari and her agents to fuel her biased and meritless campaign to induce a "bipolar backlash."

E. The First Amendment Does Not Protect Defendants' Conduct

71. Defendants are unable to seek shelter under the First Amendment for their false and misleading statements against GPS. Although protective of speech rights, the Constitution does not provide carte blanche to publishers like Defendants, who are responsible for the content of the materials that they disseminate, to recklessly publish unlawful statements that disparage businesses without regard for the truth or falsity of their statements.

72. Calculated and reckless falsehoods, such as the statements published by Defendants in the Article, which specifically names GPS and its technology, fall far outside the ambit of First Amendment protection.

73. While a hallmark of the First Amendment is free speech and academic freedom—propositions that GPS stands for and encourages—First Amendment protection does not extend to intentional and negligent untruthful statements, including those made under the guise of academia and a peer-reviewed publication. Indeed, the data proffered in the Article is not unbiased scientific debate or scholarly discourse, but rather, an erroneous, reckless, and misleading presentation of

deliberately false information in an attempt to defeat GPS. The First Amendment does not protect such speech.

F. The Texas Litigation

74. In late 2020 and early 2021, one of GPS's competitors, enVerid, and its "consultant" Zaatari, began a smear campaign and started spreading false and misleading statements about GPS's technology, including the defamatory statement that GPS's products are not safe. Zaatari and her agents specifically targeted GPS's school district customers in an effort to steal the business for enVerid's financial gain.

75. Zaatari has been, and is, a paid advisor for enVerid tasked with growing enVerid's business by stealing customers from GPS. enVerid has worked steadfastly with Zaatari to create what they call "bipolar backlash" for the purpose of undermining GPS's business. Zaatari was central to enVerid's scheme where she posed as an objective scientist in critiquing GPS and its products publicly, through industry presentations, publications, social media posts, and more, when in reality she was working for enVerid to gain competitive advantage by spreading false and defamatory claims about GPS's technology.

76. Zaatari and her agents relied upon the Article in making these false and defamatory attacks against GPS.

77. Consequently, GPS was forced to file a lawsuit against Zaatari and other defendants in April 2021 in federal court in the Texas Litigation. The case is currently pending and scheduled for trial in June 2022.³⁷

³⁷ A true and correct copy of the operative Third Amended Complaint in the Texas Litigation is attached hereto as **Exhibit F**.

G. Stephens Was Motivated to Skew the Results of the Study

78. Stephens has been working closely with Zaatari to attack GPS since 2021. Stephens has become a key partner alongside Zaatari in her pursuit of cultivating “bipolar backlash,” working with her directly to help advance enVerid’s business goals.

79. Indeed, Stephens had a predetermined agenda when he proposed the study to Zeng and subsequently penned the Article. As one example, in an email dated November 2, 2020, Zeng reported test results of the study to Stephens which showed agglomeration efficacy. Zeng stated in the email: *“Perhaps the ionizer charged a part of the particles at first, then the charged particles coagulate together into larger particles and settled faster.”* Not happy with this conclusion, Stephens responded trying to come up with any reason to ignore the results. He stated in response, *“So I would just suggest ignoring those bins.”* Stephens later tried to justify not using recirculation for the test while knowing that recirculation was the proper set-up. Zeng eventually capitulated to Stephens’s will and agreed to ignore certain test data, and in an email dated November 3, 2020, Stephens proclaimed, *“I think our story is strong now.”*³⁸

80. After its publication, Zaatari used the Article to strategically attack GPS and issued a so-called “Open Letter” in April 2021 where she cited to the Article in attacking GPS’s technology and seeking to interfere with GPS’s school district customers. In the Open Letter (co-signed by Stephens, Gall, and Farmer—all authors of the Article), Zaatari falsely stated that she had no conflict of interest when in fact, she was working directly for enVerid at the time to expand its business, which Stephens fully supported.

81. Stephens’s contribution to the “bipolar backlash” was further motivated by Zaatari’s spearheading of raising funds for Zeng and Stephens to conduct additional studies related

³⁸ See Ex. E at B. Stephens email chain dated Nov. 2–3, 2020.

to GPS's NPBI™ technology. And the evidence demonstrates that Zaatari's involvement with Stephens's subsequent studies went beyond just raising funds.

82. For example, in an email dated April 19, 2021 (around the same time as the Open Letter), Zaatari reacted to a test matrix sent to her by Stephens and Zeng. She responded by coaching them on how to test a specific GPS device and stated, "The output of this work will help inform schools [sic] decision."³⁹ Zaatari was working for enVerid to steal GPS's school district customers when she wrote this email.

83. In addition, in an effort to promote "bipolar backlash," Zaatari and Stephens often tweet and retweet each other's posts that condemn the use of ionization products. Likewise, Zaatari and Stephens jump at every opportunity to publicly comment to the media and other outlets regarding GPS's NPBI™ technology, or similar ionization technology.

84. Stephens's "story" is clear: he designed the study and wrote the Article to help Zaatari in her war against GPS.

85. The false, misleading, and defamatory statements written and published by Defendants in the Article have caused, and continue to cause, GPS substantial harm.

CAUSES OF ACTION

Count I: Defamation

86. GPS incorporates the preceding paragraphs of the Complaint by reference as if fully set forth herein.

87. Defendants have intentionally published false statements to the public at large through publishing the Article in the publicly available and allegedly peer-reviewed journal *Building and Environment* to actual and prospective customers of GPS, and to members of the

³⁹ See Exhibit G, a true and correct copy of which is attached hereto.

industry directly and indirectly by virtue of, among others, the numerous inaccurate, misleading, disparaging, and defamatory statements described and identified in the paragraphs above. Each of these statements are unambiguously defamatory based on the context.

88. The false statements published by Defendants refer to GPS and specifically purport to convey untrue facts about GPS and/or GPS's NPBI™ air purification system.

89. These false statements expressly or impliedly asserted facts that are objectively verifiable, such as Defendants' inaccurate, misleading, disparaging, and defamatory statements about the characteristics, efficacy, safety, and quality of GPS's products. For example, the Article reported an increase in four analytes (formaldehyde, acetaldehyde, butyraldehyde, and toluene) and concluded that GPS's NPBI™ air purification system led to "observed increases in some oxygenated VOCs."⁴⁰ But this statement was not supported by the data. Appendices 1 and 2 contained in the Article's supplementary data purport to show the complete analyte concentration measurements reported from the lab chamber tests. When compared to the measurements selectively published in Tables 1 and 2 in the main Article, the results are the exact opposite.

90. Defendants' written statements are also libel per se as defined by North Carolina state law. Defendants' numerous statements impeach GPS in its profession by maligning GPS's honesty, integrity, virtue, and reputation by either directly stating or indirectly implying that GPS's products and technology are not only inadequate for their intended purpose, but also pose safety risks to the public. These statements are reasonably calculated to produce such results and imply that GPS knowingly or intentionally disregards the safety and well-being of its customers and the public at large in developing, promoting, and selling its products.

⁴⁰ Ex. A at 8; *see also id.* at Abstract.

91. Defendants' written and published statements are therefore defamatory per se under North Carolina common law because they have injured GPS in its occupation and business. Among other things, Defendants have made inaccurate, misleading, disparaging, and defamatory statements to the public, including GPS's customers and prospective customers, regarding the characteristics, efficacy, safety, and quality of GPS's products and technology.

92. Upon information and belief, Defendants wrote and published these statements with actual malice. Defendants knew or reasonably should have known that the statements in question were false. Defendants are aware that omitting certain facts from its statements could leave a reader, including but not limited to GPS's current and prospective customers, with a substantially false impression and, in fact, Stephens wrote the statements with the intent to leave those impressions on the reader. Upon information and belief, Defendants purposefully avoid the truth by refusing to consult sources that can objectively verify the truth (or falsity) of its statements. At the very least, Defendants are negligent in determining whether its statements are true.

93. Defendants' false statements are defamatory per se, entitling GPS to a presumption of general damages. Additionally, Defendants' false statements directly and proximately injured GPS, and will continue to do so. As a result, GPS has suffered and will continue to suffer general damages, including injury to its character, reputation within the industry, and the goodwill it has developed over many years.

94. Defendants' false statements directly and proximately injured GPS, and will continue to do so, resulting in special damages, including loss of earning capacity and loss of past and future income. GPS satisfied its obligations under N.C. Gen. Stat. § 99-1(a) and provided

notice to Defendants of the Article's false and defamatory nature.⁴¹ GPS is therefore entitled to specific, punitive, and other damages to which GPS may be entitled.

Count II: Unfair and Deceptive Trade Practices

95. GPS incorporates the preceding paragraphs of the Complaint by reference as if fully set forth herein.

96. As described above, Defendants have published false and disparaging written statements about GPS's products, including the NPBI™ air purification system, thereby impacting its business and constituting libel per se. Defendants' statements were and continue to be disparaging because they cast doubt on the characteristics, efficacy, safety, and quality of GPS's products, including the NPBI™ air purification system. Defendants accomplish this by making claims and purported assessments about GPS and GPS's products, often false even though they are disguised as an unbiased study and assessment of GPS's products. Defendants' statements impeach GPS in its trade or business because the statements go to the heart of GPS's character as a business, its trustworthiness, and the quality of its products, and therefore constitute an unfair or deceptive act affecting commerce.

97. Defendants' statements were directed to, among others, GPS's customers, prospective customers, and individuals and businesses throughout the industry and therefore were intended to and did affect commerce.

98. The context of these statements demonstrates that Defendants intended to cast doubt on the characteristics, efficacy, safety, and quality of GPS's products. These statements demonstrate an intent to paint GPS as a producer of dangerous and unhealthy products and a company with whom its existing and prospective retailers and customers should sever ties.

⁴¹ See generally, Ex. B at 8 (copying Elsevier representative).

99. Defendants' false and misleading statements have caused, and will continue to cause, the loss of goodwill and the loss of current and prospective customers who, but for Defendants' actions, would continue to do business with GPS. These direct pecuniary losses are attributable to Defendants' false communications because, on information and belief, those false statements have played a substantial part in causing irreparable harm to GPS's reputation in the industry.

100. Because Defendants have committed unfair and deceptive trade practices as outlined above, GPS is entitled to treble damages. *See* N.C. Gen. Stat. § 75-16.

JURY DEMAND

GPS hereby demands a trial by jury on all claims and issues so triable.

PRAYER FOR RELIEF

GPS respectfully requests that the Court enter judgment in its favor and against Defendants as follows:

- A. an award of GPS's damages, including its lost profits;
- B. an award in an amount that will enable GPS to engage in corrective advertising at a level that will effectively counter Defendants' unlawful activity;
- C. an award of GPS's reasonable attorneys' fees and the costs of this action;
- D. exemplary damages in a sum to be determined by the trier of fact;
- E. treble damages pursuant to N.C. Gen. Stat. § 75-16;
- F. pre- and post-judgment interest as allowed by law;
- G. an order requiring Defendants to retract their false statements and engage in corrective advertising; and
- H. such other and further relief to which GPS may be entitled.

Dated: January 26, 2022.

Respectfully submitted,

MC GUIREWOODS LLP

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing document was electronically filed on January 26, 2022, using the Court's CM/ECF system, which will send notice of such filing to all counsel of record who are deemed to have consented to electronic service.

/s/ Robert A. Muckenfuss
Robert A. Muckenfuss